IN THE MATTER OF:	)	DOCKET NO. 84-1061
City of New Bedford for Sullivan's Ledge New Bedford, Massachusetts	)	
PROCEEDINGS UNDER SECTION 106(a) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT of 1980, 42 U.S.C. §9606(a).	)	DETERMINATIONS AND ADMINISTRATIVE ORDER

JURISDICTION

This Administrative Order is issued pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (hereinafter CERCLA), 42 U.S.C. §9606(a); and delegated to the Administrator of the Environmental Protection Agency (hereinafter EPA) by Executive Order 12316, August 20, 1981, 46 Fed. Reg. 42237; and further delegated to the undersigned official of EPA by EPA Delegation No. 14-14, effective March 31, 1983. Notice of the issuance of this Order has been provided to the Commonwealth of Massachusetts. Respondent is the City of New Bedford, Massachusetts.

FINDINGS OF FACTS

1. Sullivan's Ledge (hereinafter "the site") is approximately 10 acres in size and, as shown in Attachment A, is located in New Bedford, Massachusetts between the Rt. 140/I-195 interchange, Hathaway Road and the New Bedford Whaler Inn Property. The site was originally a private granite quarry

but is presently owned by the City of New Bedford. The site was previously used by the City for industrial waste and refuse disposal, but is presently filled and graded.

2. On September 3 and 9, 1982, GCA Corporation performed an analysis of chemical constituents in the ambient air in and around the site. As shown in Attachment B, results of the monitoring indicate that average total levels of polychlorinated biphenyls (hereinafter PCB's) detected at station 2, directly on-site, were 260 ng/m3. Total levels of PCBs include values of Aroclor 1242, 1016 and 1254. PCB levels at station 2 were 40 times higher then background levels.

3. From February 15 to March 16, 1983, GCA Corporation, conducted a sampling survey at the site which included soil borings, and ground and surface water samples. Wells were installed up-gradient (wells 2,2a) and down-gradient (wells 1,1a) of the disposal area, (see Attachment A, Figure 1), so as to penetrate the rock ledge surrounding the filled in quarry and encounter any fractures that would connect the wells to the former quarry. The water table at the rock ledge around the site was found to be about 9 feet below the land surface with a substantial gradient in a northeasterly direction. The rock ledge had significant fracture zones below the water table both up-gradient and down-gradient of the site.

4. The concentrations of organic contaminants identified

in both the soil and liquid samples from the above study are found in Attachment C, Tables 1 and 2. Representative levels of contamination are:

Contaminant	Soil Sample	Liquid Sample
Vinyl chloride	3.5 mg/kg	11-13 mg/l
trichloroethylene	2.7 - 9.8 mg/kg	8.1 - 28 mg/l
benzene	3.2 - 7.9 mg/kg	110 - 470 mg/l
chlorobenzene	3.2 - 11 mg/kg	28 - 170 mg/l
anthracene/ phenanthrene	50 mg/kg	
benzo(a)anthracene/ chrysene	0.23 - 38 mg/kg	
fluoranthene	28 mg/kg	
pyrene	4.8 - 45 mg/kg	
PCB (aroclor 1254)	0.15 - 22 mg/kg	0.1 - 14 mg/l

5. The results of the groundwater sampling described in paragraphs 2 and 3 above indicate that the up-gradient wells (2 and 2a) are essentially free of contaminants, while the down gradient wells (1 and 1a) exhibit significant concentrations of a number of organic contaminants. Since the area between the two sets of wells is where the site is located, it is apparent that these contaminants are leaching from the site.

6. On March 15 and April 19, 1984, EPA personnel collected and subsequently analyzed a total of 24 soil samples from the site. The concentrations of PCB's (as Aroclor 1254)

ranged from 0.4 mg/kg to 3660 mg/kg in these samples (Attachment D).

7. On August 29, 1984 EPA personnel performed an inspection of the site. The site is readily accessible to the public, and located in a commercial area adjacent to a Motor Inn and restaurant. Foot paths entering the site are visible adjacent to the Motor Inn and Hathaway Road indicating recent use. The site may attract children as a recreational area. Visual inspection of the site provides evidence that vehicles have recently and periodically driven on the site and possibly transported surface PCB's off site.

8. Capacitors and deteriorating chemical drums are visible on the ground surface of the site.

ENDANGERMENT

9. Chemicals found in the soil and migrating to the groundwater beneath the site included vinyl chloride, trichlorethylene, benzene, chlorobenzene, Benzo (a) anthracene/chrysene and PCB's.

a. Vinyl chloride and trichlorethylene are recognized human carcinogens which have similiar exposure symptoms such as eye, nose and throat irritation. Chronic exposure to lower levels of vinyl chloride has been found to cause degenerative bone changes. Repeated or prolonged skin contact with trichlorelthylene may

cause dermatitis.

b. Exposure to benzene as either a liquid or vapor may produce primary irritation to skin, eyes and the upper respiratory tract. Benzene is a known carcinogen and acute exposure results in central nervous system depression.

c. Chlorobenzene at concentrations greater than 20 mg/l has an irritating effect on the sensory organs such as eyes, nose and skin.

d. Benzo (a) anthracene/chrysene and Pyrene (Polynuclear Aromatic Hydrocarbons) have been demonstrated to be carcinogenic in test animals.

e. PCB's are suspected carcinogens and are persistent in the environment. PCB's on or near the surface of soils may expose animals and humans to PCB's. Routes of entry include: inhalation of fume or vapor, percutaneous absorbtion of liquid, ingestion, and eye and skin contact. Air PCB concentrations of 0.1 mg/m^3 can produce toxic effects.

DETERMINATIONS

10. The substances found in the soil, air and groundwater sampling at the site described in the above Findings are hazardous substances within the meaning of Section 101(14) of CERCLA, 42 U.S.C. §9601(14).

11. The site is a "facility" within the meaning of Section

101(9) of CERCLA, 42 U.S.C. §9601(9), and the City of New Bedford is the owner and operator of the site, within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §9601(20).

12. The Regional Adminstrator hereby determines that actual or threatened releases of hazardous substances at the site may present an imminent and substantial endangerment to the public health or welfare or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. §9606(a), and that the presence of hazardous substances on the site may present an imminent and substantial endangerment to the public health or welfare by exposure to persons entering the site as long as access remains free and unrestricted.

ORDER

13. To abate the imminent and substantial endangerment posed by circumstances at the site and to protect public health, welfare and the environment, it is hereby ordered that the City of New Bedford undertake the following activities within the specified time periods:

a. Within twenty-one (21) days of the effective date of this Order, the City of New Bedford shall submit a plan and schedule for securing the site so as to prevent unwarned entry, and to minimize the unauthorized entry of persons or animals onto the site. The plan shall include provision for approximately 4000 feet of fencing to be erected on three sides of the site, and such repairs

as may be necessary on the fourth side, adjacent to I-195, which is presently fenced. The plan shall also provide for bilingual (English and Portuguese) signs with the legend, "Environmental Hazard. Danger-Unauthorized Personnel Keep Out," to be posted at entry points to the site.

b. Upon approval of the plan and schedule by EPA, the City of New Bedford shall secure and post the Site according to the plan and schedule, but in no event later than ninety (90) days from the effective date of this Order except under circumstances of delay caused by unreasonably inclement weather, in which case the City of New Bedford shall notify EPA and complete the work as soon as reasonably possible.

PARTIES BOUND

14. This Order shall apply to and be binding upon the City of New Bedford and its assigns.

15. The Respondent may request, within seven (7) days after receipt of this Order, a conference with EPA, to be held within thirteen (13) days of the date of issuance to discuss this Order, including its applicability, the factual determinations upon which the Order is based, the appropriateness of any actions which the Respondent is ordered to take, or any other relevant and material issues or contentions which it may have regarding this Order. Respondent may appear in person or by an attorney or other representative

at any conference held at its request. Any request for a conference should be made to Charles Bering, Office of Regional Counsel, EPA, Region I, John F. Kennedy Federal Building, Boston, Massachusetts, 02203.

16. This Order is effective fourteen (14) days after the date of issuance notwithstanding any conferences requested pursuant to paragraph 15 above. All times for performance or response activities shall be calculated from that date.

17. Respondent is hereby placed on notice that EPA may take any action, including the actions described in this Order, which may be necessary in the opinion of EPA for the protection of public health or welfare or the environment, and respondent may be liable under Section 107 of CERCLA, 42 U.S.C. §9607 for the costs of those government actions.

PENALTIES FOR NON-COMPLIANCE

18. Pursuant to Section 106(b) of CERCLA, 42 U.S.C. §9606(b), respondent is advised that willful violation or failure or refusal to comply with this Order, or any portion thereof, may subject respondent to a civil penalty of not more than $5,000.00 for each day in which violation occurs or such failure to comply continues. Pursuant to Section 107(c) of CERCLA, 42 U.S.C. §9607(c), failure to comply with this Order, or any portion thereof, without sufficient cause, may also subject respondent to liability for punitive damages in the amount of three times the total of all costs

incurred by the government as a result of respon
failure to take proper action.

Issued at Boston, Massachusetts this day of 1984.

Date: September 28, 1984

Michael R., Deland
Regional Administrator
United States Environmental
Protection Agency
Region I
Boston, Massachusetts

Attachment A

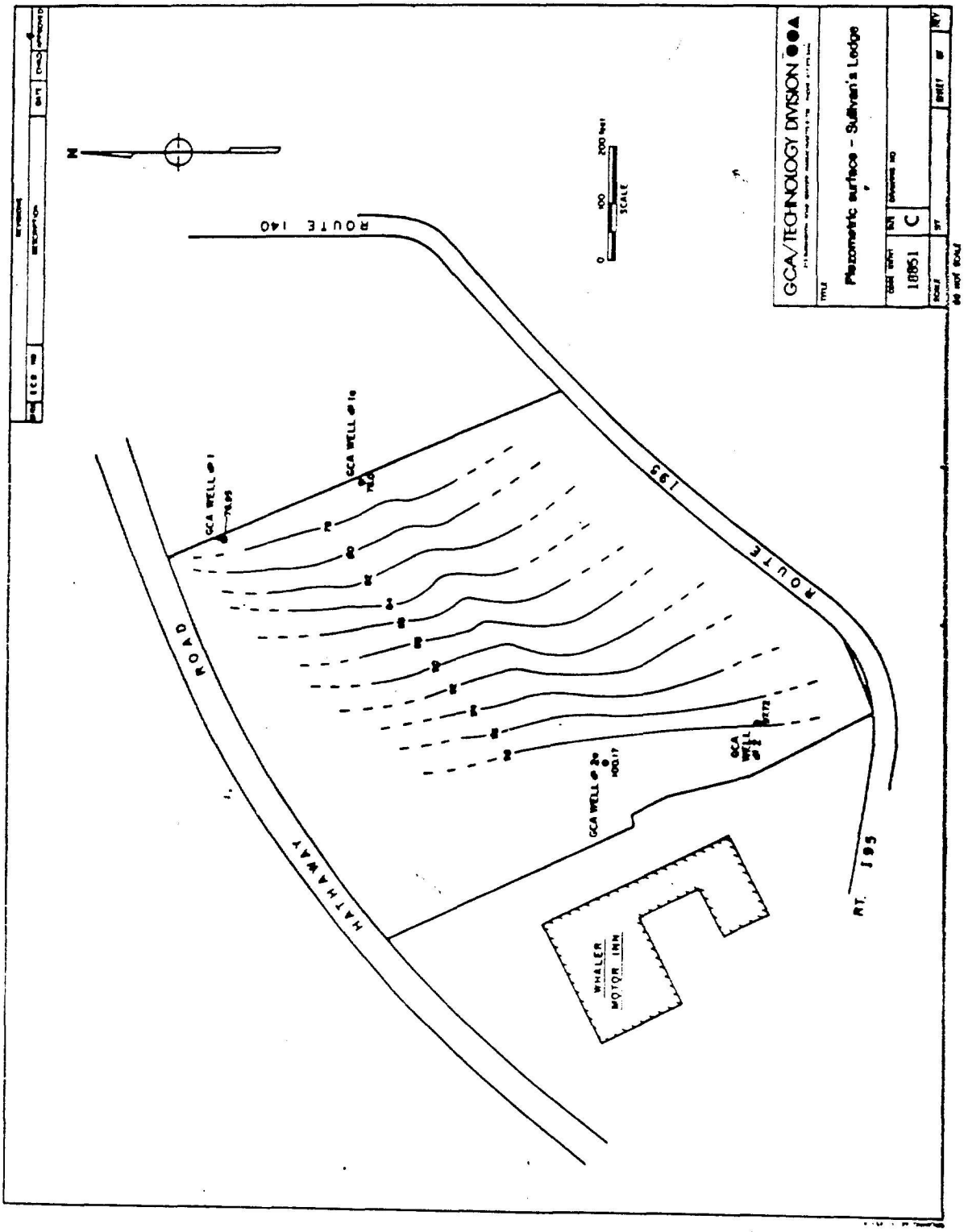

Figure 1 Piezometric surface at Sullivan's Ledge.

Attachment A

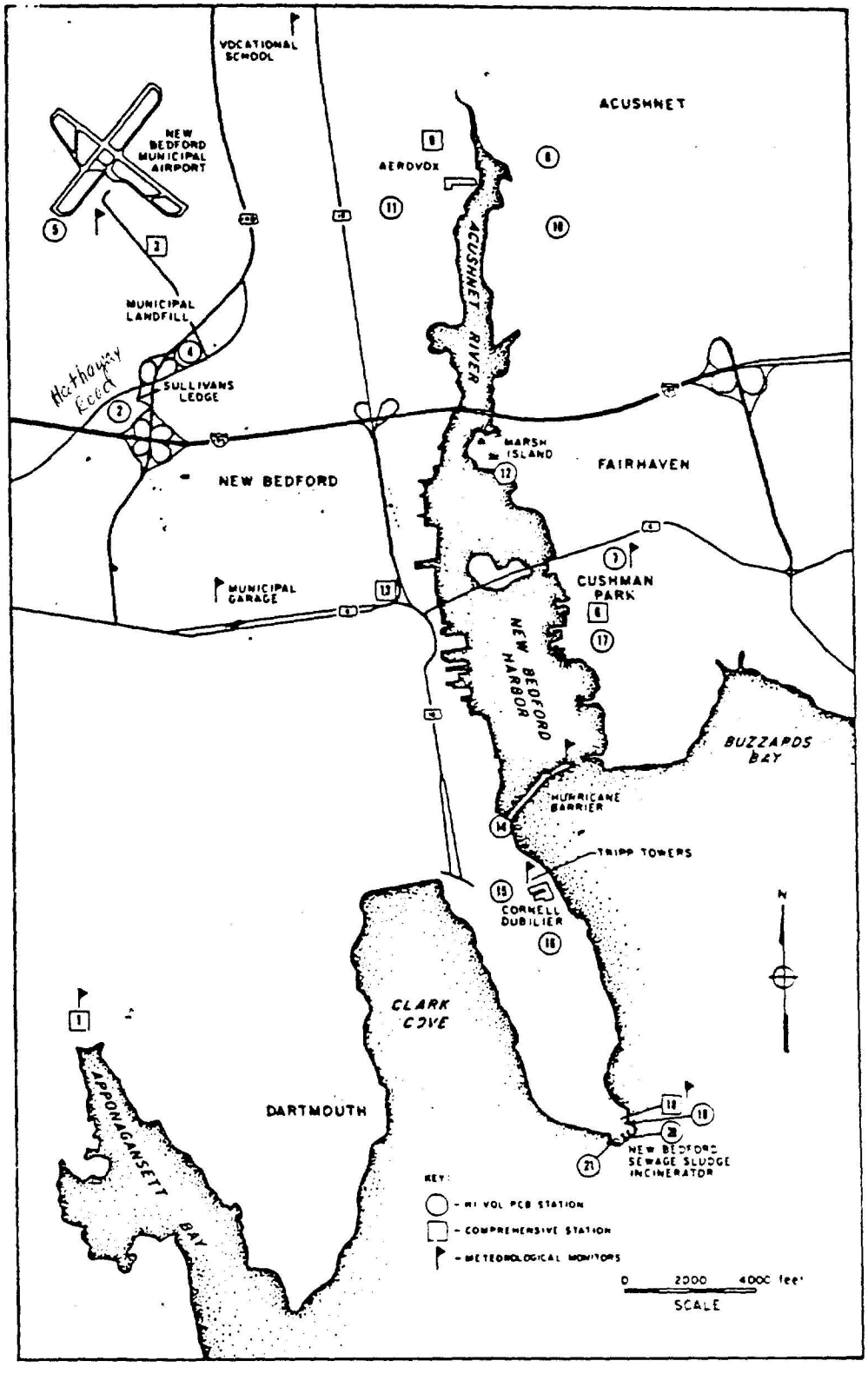

Figure 2 Ambient monitoring stations--site schematic.

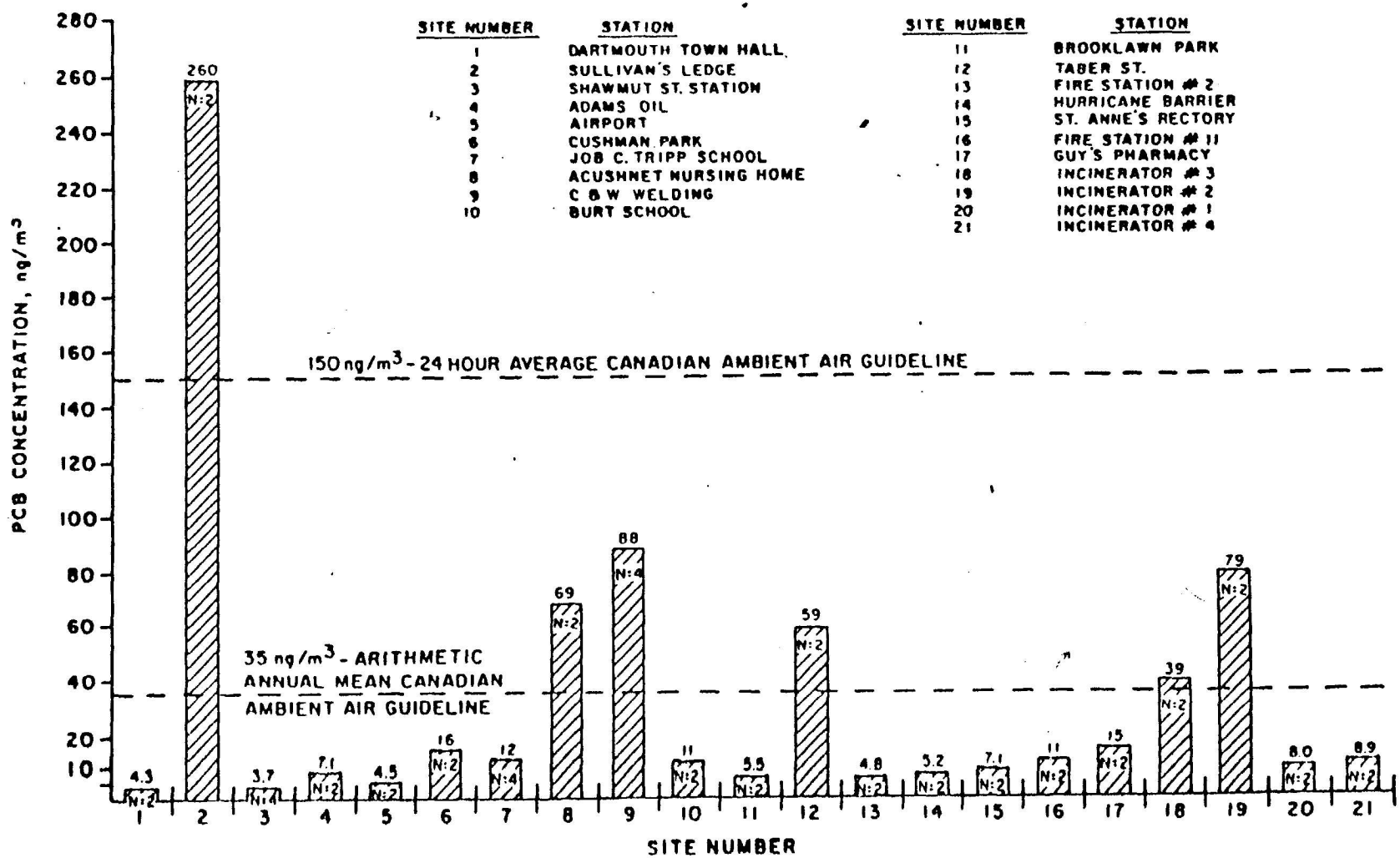

Figure 1 New Bedford ambient monitoring program--comparison of average PCB test results (Day 2/3) to available air quality standards.

Attachment B

TABLE 1 POLYCHLORINATED BIPHENYL (PCB) MEASUREMENTS: CUMULATIVE TEST RESULTS--POTENTIAL AREA SOURCES[a]

Site area	Site No.	Concentration (ng/m^3)					
		Aroclor 1242/1016			Aroclor 1254		
		Day 2	Day 3	$\bar{X}$	Day 2	Day 3	$\bar{X}$
Sullivan's Ledge--onsite	2	180	140	160	110	94	100
Marsh Island	12	52	60	56	2.3	3.7	3.0
Cushman Park--onsite	6	16	15	16	<2	<2	-
Cumulative Background[b] ($\bar{X} \pm Sx$)		11 ± 6.0	7.6 ± 3.8	9.5 ± 5.2	-	-	-

[a]Areas suspected of containing PCB contamination based on existing historical information and hence providing a potential source of PCB contamination to the ambient atmosphere.

[b]Reflects cumulative values from all background stations as shown in Table 20.

TABLE 1 RESULTS OF WELL WATER ANALYSES

Component	Concentration (µg/l)							
	Sullivan's Ledge				Municipal landfill			Airport
	Well 1	Well 1a	Well 2	Well 2a	Well 3	Well 4	Well 5	Well 6
VOLATILE ORGANICS								
Priority Pollutants								
vinyl chloride	13000	1100	2.9	--	--	--	--	--
methylene chloride	Trace	7.7	--	--	--	--	Trace	--
1,1-dichloroethylene	280	180	--	--	--	--	--	--
1,1-dichloroethane	--	--	--	--	--	--	Trace	--
trans-1,2-dichloroethylene	50000	7400	13	--	3.4	--	--	--
chloroform	--	--	Trace	83	--	--	--	Trace
1,1,1-trichloroethane	--	--	--	--	--	--	--	--
trichloroethylene	8100	28000	39	--	Trace	Trace	--	--
benzene	470	110	--	--	--	--	--	--
tetrachloroethylene	7.2	26	--	--	--	--	--	--
toluene	1500	1100	--	--	--	--	--	--
chlorobenzene	170	28	--	--	--	--	--	--
ethylbenzene	500	1100	--	--	--	--	--	--
Other								
benzene, chlorofluoroisomer	--	--	79	--	--	--	--	--
benzene, dimethylisomer	85	32	--	--	--	--	2.3	--
benzene, ethenyl	--	1200	--	--	--	--	--	--
2-butanone	--	110	--	--	--	--	--	--
cyclohexane	50	39	--	15	--	--	--	--
cyclohexane, dimethyl isomer	10	--	--	--	--	--	--	--
cyclohexane, methyl	56	37	--	--	--	--	--	--
cyclopentane, methyl	53	32	--	58	--	--	--	--
hexane	--	--	--	130	--	--	--	--
methane, thiobis	--	--	--	--	--	--	9.0	--
pentane, 3-methyl	--	--	--	58	--	--	--	--
2-pentanone, 4-methyl	--	440	--	--	--	--	--	--

(continued)

Attachment C

TABLE 1 (continued)

Component	Concentration (µg/l)							
	Sullivan's Ledge				Municipal landfill			Airport
	Well 1	Well 1a	Well 2	Well 2a	Well 3	Well 4	Well 5	Well 6
SEMIVOLATILE ORGANICS								
Priority Pollutants								
aldrin	—	--	0.015	--	--	--	0.013	0.013
Aroclor 1242	--	0.44	--	--	--	--	--	—
Aroclor 1254	14	--	--	0.61	0.1	--	--	--
bis (2-ethylhexyl) phthalate	--	--	NA	90	NA	NA	NA	NA
2-chloronaphthalene	3.7	--	NA	--	NA	NA	NA	NA
1,2-dichlorobenzene	--	--	NA	--	NA	NA	NA	NA
1,3-dichlorobenzene	—	--	NA	--	NA	NA	NA	NA
1,4-dichlorobenzene	3.1	--	NA	--	NA	NA	NA	NA
diethyl phthalate	3.0	--	NA	--	NA	NA	NA	NA
dioctyl phthalate	--	--	NA	9.3	NA	NA	NA	NA
endrin	0.026	--	0.017	--	NA	NA	0.037	0.022
endrin aldehyde	--	--	--	0.028	--	--	--	—
hexachlorobenzene	6.1	--	NA	--	NA	NA	NA	NA
isophorone	12	--	NA	--	NA	NA	NA	NA
naphthalene	42	--	NA	--	NA	NA	NA	NA
1,2,4-trichlorobenzene	--	15	NA	--	NA	NA	NA	NA
N-nitrosodimethylamine	11	--	NA	--	NA	NA	NA	NA
N-nitrosodiphenylamine	--	4.7	NA	--	NA	NA	NA	NA
Other								
benzene, 1-ethenyl-4-methyl	2.2	20	NA	--	NA	NA	NA	NA
ethanone, 1-phenyl	3.4	3.0	NA	--	NA	NA	NA	NA
2-hydroxy benzothiazole	67	420	NA	--	NA	NA	NA	NA
1-H-inden-1-one, 2,3-dihydro-	5.6	--	NA	--	NA	NA	NA	NA
naphthalene, dichloro isomers	7.8	--	NA	--	NA	NA	NA	NA
naphthalene, methyl isomers	6.1	--	NA	--	NA	NA	NA	NA
quinoline, 1,2-dihydro-2,2,4-trimethyl-	3.1	--	NA	--	NA	NA	NA	NA
unidentified component, alkyl ether compound	340	640	NA	--	NA	NA	NA	NA

(-) = Compound not detected.
NA = As noted in Section 6 these samples were not submitted for these analysis.

Attachment C

TABLE 2 RESULTS O ANALYSES OF SOIL SAMPLES

	Sullivan's Ledge			Municipal Landfill			Airport
Boring No.:	1a-2	1-2	2a	3a	4a	5	6
Blow No.:	30	32	28	34	39	11	15
Soil type/depth:	Fill-black/ brown sand and gravel 4'-5'	Coarse brown sand and gravel 4'-5'	Fill-sand, gravel cobbles, silt 4'-5'	Fibrous peat 10'-11.5'	Sandy silty clay 16'-17.5'	Grey silty sand 14'-15.5'	Fine grey, silty sand 4'-5.5'
Component				Concentration (ug/kg)			
VOLATILE ORGANICS							
Priority Pollutants							
vinyl chloride	-	3.5	-	-	23	-	-
chloroethane	-	3.4	-	-	-	-	-
methylene chloride	9.8	8.2	9.3	27	-	150	85
chloroform	-	-	Trace	-	-	-	-
1,1,1-trichloroethane	Trace	2.9	3.8	-	-	-	-
trichloroethylene	-	2.7	9.8	6.4	5.5	-	-
benzene	3.2	7.9	Trace	Trace	Trace	-	-
tetrachloroethylene	Trace	-	Trace	-	Trace	-	-
toluene	Trace	2.3	Trace	Trace	Trace	-	-
chlorobenzene	3.2	11	-	-	-	-	-
ethylbenzene	Trace	3.7	Trace	-	Trace	-	-
Other							
benzene, dichloro isomers	150	250	-	-	-	-	-
Benzene, dimethyl isomers	2.5	2.9	-	-	-	-	-
2-butanone	-	2.2	Trace	-	-	-	-
cyclohexane	2.2	38	2.3	Trace	Trace	19	14
cyclohexane, methyl-	-	100	-	-	-	-	-
cyclopentane, methyl-	-	30	-	-	-	-	-
2-propanone	-	-	-	Trace	-	-	-

(continued)

TABLE 2 (continued)

	Sullivan's Ledge			Municipal Landfill			Airport
Boring No.:	1a-2	1-2	2a	3a	4a	5	6
Blow No.:	30	32	28	34	39	11	15
Soil type/depth:	Fill-black/ brown sand and gravel 4'-5'	Coarse brown sand and gravel 4'-5'	Fill-sand, gravel cobbles, silt 4'-5'	Fibrous peat 10'-11.5'	Sandy silty clay 16'-17.5'	Grey silty sand 14'-15.5'	Fine grey, silty sand 4'-5.5'
Component				Concentration (mg/kg)			
SEMIVOLATILE ORGANICS							
Priority Pollutants							
anthracene/phenanthrene	-	50	-	5.8	NA	NA	NA
benzo(a)anthracene/chrysene	0.23	38	-	4.6	NA	NA	NA
benzo(a)pyrene	-	15	-	2.0	NA	NA	NA
benzo(b)/benzo(k)fluoranthene	-	19	-	3.0	NA	NA	NA
benzo(ghi)perylene	-	4.9	-	-	NA	NA	NA
indeno(1,2,3-cd)pyrene	-	5.5	-	-	NA	NA	NA
fluoranthene	-	28	-	4.6	NA	NA	NA
pyrene	-	45	-	4.8	NA	NA	NA
fluorene	-	7.9	-	-	NA	NA	NA
hexachlorobenzene	0.29	-	1.0	-	NA	NA	NA
bis(2-ethylhexyl) phthalate	0.32	-	2.1	-	NA	NA	NA
aroclor 1242	-	-	-	-	NA	NA	NA
aroclor 1254	10	22	0.15	45	NA	NA	NA

(continued)

TABLE 2 (continued)

	Sullivan's Ledge			Municipal Landfill			Airport
Boring No.:	1a-2	1-2	2a	3a	4a	5	6
Blow No.:	30	32	28	34	39	11	15
Soil type/depth:	Fill-black/ brown sand and gravel 4'-5'	Coarse brown sand and gravel 4'-5'	Fill-sand, gravel cobbles, silt 4'-5'	Fibrous peat 10'-11.5'	Sandy silty clay 16'-17.5'	Grey silty sand 14'-15.5'	Fine grey, silty sand 4'-5.5'
Component				Concentration (mg/kg)			
SEMIVOLATILE ORGANICS (continued)							
Other							
aliphatic compounds (MW 200)	-	-	-	210	NA	NA	NA
aromatic compounds, $C_{17}H_{12}$, isomers	-	36	-	2.5	NA	NA	NA
aromatic compounds, $C_{18}H_{10}$, isomers	-	4.2	-	-	NA	NA	NA
aromatic compounds, $C_{19}H_{14}$, isomers	-	14	-	-	NA	NA	NA
aromatic compounds, $C_{20}H_{12}$, isomers	-	3.8	-	-	NA	NA	NA
benzaldehyde, hydroxy isomers	-	-	-	3.4	NA	NA	NA
benzaldehyde, hydroxymethoxy isomers	-	-	-	2.2	NA	NA	NA
benzeneacetic acid	-	-	-	2.0	NA	NA	NA
benzene, alkyl, C_8H_{10}, isomers	3.5	4.8	3.4	21	NA	NA	NA
benzene, alkyl, C_9H_{12}, isomers	4.4	5.6	4.3	25	NA	NA	NA
dibenzothiophene	-	6.7	-	-	NA	NA	NA
dibenzothiophene, methyl isomers	-	10	-	-	NA	NA	NA
fluorene, methyl isomers	-	23	-	-	NA	NA	NA
2-hydroxybenzothiazole	-	0.7	-		NA	NA	NA
naphthalene, alkyl isomers	-	16	-	-	NA	NA	NA
naphthalene, dimethyl isomers	-	20	-	-	NA	NA	NA
naphthalene, methyl isomers	-	5.2	-	-	NA	NA	NA
phenanthrene, alkyl isomers	-	87	-	2.2	NA	NA	NA
3H-purine, 2,3-dimethyl-6-(methylthio)	-	-	-	2.3	NA	NA	NA
sulfur, molecular	-	15	-	6.1	NA	NA	NA
terphenyl isomers	-	5.9	-	-	NA	NA	NA

(-) = Component not detected.
NA = Sample not analyzed for this component.

Attachment C

Attachment D

Table 1

EPA - Surface Soil Samples

March 15 & April 19, 1984

Sullivan's Ledge, PCB Screening

			ppm 1254
53921	2.35	ng/ul	5.8 ppm
53922	7.1	ng/ul	
53923	0.6	ng/ul	
53924	853	ng/ul	2,130 ppm
53925	63	ng/ul	157 ppm
53926	82	ng/ul	205 ppm
53927	0.16	ng/ul	0.4
53928	173	ng/ul	432 ppm
53929	1,464	ng/ul	3,660 ppm
53930	320	ng/ul	800 ppm
53931	134	ng/ul	335 ppm
53932	209	ng/ul	522 ppm
53933	1.4	ng/ul	3.5 ppm
53934	1.1	ng/ul	2.7 ppm
53935	0.15	ng/ul	0.4 ppm
53936	2.3	ng/ul	5.7 ppm
53937	0.7	ng/ul	1.7 ppm
53938	1.1	ng/ul	2.7 ppm
53939	1.1	ng/ul	2.7 ppm
53940	1.1	ng/ul	2.7 ppm
53941	1.4	ng/ul	3.5 ppm
53942	3.4	ng/ul	8.5 ppm
53943	3.6	ng/ul	9.0 ppm
53944	4.2	ng/ul	10.5 ppm